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REMARKS

Claims 1-6, 9-21 and 23-25 are currently pending in this application. Applicants have cancelled claims 7, 8, 22 and 26 without prejudice to place the application in better condition for allowance. Reconsideration is respectfully requested in light of the above claim amendments and the following remarks.

The Examiner rejected claims 2, 5-8, 12-16 and 22-26 under 35 U.S.C § 112, second paragraph as being indefinite. Claims 2, 5, 6, 12-15, 23 and 25 have been amended to address the antecedent basis issues and claims 7-8, 22 and 26 have been cancelled. Accordingly, applicants respectfully request that this rejection be withdrawn.

The Examiner rejected claims 1-4 and 23 under 35 U.S.C §102(b) as being anticipated by U.S. Patent 6,126,611 to Bourgeois et al. Applicants respectfully traverse this rejection.

Applicants' claimed invention as recited in independent claims 1 and 23 is directed toward an implantable cardiac stimulation device for terminating or preventing sleep apnea. For example, independent claim 1 recites an implantable cardiac stimulation device comprised in part by one or more pulse generators that are capable of generating cardiac pacing pulses ... with a timing that tends to terminate the detected sleep apnea condition and a neurostimulator ... adapted to generate neurostimulation pulses for terminating the detected sleep apnea condition if the generated cardiac pacing pulses fail to terminate the detected sleep apnea condition. (Underlining added for emphasis only). Applicants respectfully submit that Bourgeois et al. do not disclose or suggest the recited claim elements.

Rather, Bourgeois et al. disclose an apparatus for managing sleep apnea that stimulates the heart at a higher rate than the heart's natural rate in response to the detection of an apnea event. (Bourgeois et al., col.2, lines 33-38). Bourgeois et al. do not however disclose or suggest generating neurostimulation pulses for terminating a detected sleep apnea if cardiac pulses first fail to terminate the apnea condition as recited in applicants' claimed invention. Accordingly, applicants respectfully submit that independent claims 1 and 23 are novel and unobvious over Bourgeois et al. and

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are therefore allowable. Applicants further submit that claim 4, which depends from claim 1, is allowable as is claim 1 and for additional limitations recited therein.

The Examiner rejected claims 1-7, 9 and 12-26 under 35 U.S.C §102(e) as being anticipated by U.S. Patent 6,574,507 to Bonnet. Applicants respectfully traverse this rejection.

Applicants' claimed invention as recited in independent claims 1, 12, 17 and 23 is directed toward an implantable cardiac stimulation device and corresponding method for terminating or preventing sleep apnea. For example, independent claim 1 recites an implantable cardiac stimulation device comprised in part by one or more pulse generators that are capable of generating cardiac pacing pulses ... with a timing that tends to terminate the detected sleep apnea condition and a neurostimulator ... adapted to generate neurostimulation pulses for terminating the detected sleep apnea condition if the generated cardiac pacing pulses fail to terminate the detected sleep apnea condition. (Underlining added for emphasis only). Applicants respectfully submit that Bonnet does not disclose or suggest the recited claim elements.

Rather, Bonnet simply discloses that either muscular stimulation (i.e. cardiac stimulation to accelerate the heart rate of the myocardium) or neurological stimulation, to cause the immediate opening of the esophagus to allow inspiration can be used to terminate a detected apnea condition. (Bonnet, col. 8, lines 56-59). Bonnet does not however, disclose or suggest generating neurostimulation pulses for terminating a detected sleep apnea condition if cardiac pacing pulses fail to terminate the detected sleep apnea condition as recited in applicants' claimed invention.

Accordingly, applicants respectfully submit that independent claims 1, 12, 17 and 23 are novel and unobvious over Bourgeois et.al. and are therefore allowable. Applicants further submit that claims 2-6 and 9-11, claims 13-16, claims 18-21 and claims 24-25 that depend from claims 1, 12, 17 and 23 respectively are allowable as are claims 1, 12, 17 and 23 and for additional limitations recited therein.

The Examiner rejected claims 1, 2, 4, 5, 7, 9-13, 16, 17, 19, 21-23, 25 and 26 under 35 U.S.C §102(e) as being anticipated by U.S. Patent 6,641,542 to Cho et al. Applicants respectfully traverse this rejection.

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Applicants' claimed invention as recited in independent claims 1, 12, 17 and 23 is directed toward an implantable cardiac stimulation device and corresponding method for terminating or preventing sleep apnea. For example, independent claim 1 recites an implantable cardiac stimulation device comprised in part by one or more pulse generators that are capable of generating cardiac pacing pulses ... with a timing that tends to terminate the detected sleep apnea condition and a neurostimulator ... adapted to generate neurostimulation pulses for application to the body's upper airways or diaphragm to terminate the detected sleep apnea condition if the generated cardiac pacing pulses fail to terminate the detected sleep apnea condition. (Underlining added for emphasis only). Applicants respectfully submit that Cho et al. do not disclose or suggest the recited claim elements.

Rather Cho et al. disclose that a plurality of sleep therapies may be delivered to the patient, in accordance with conventional practice to terminate a sleep apnea. For example, Cho et al. cite U.S. Pat. No. 5,591,216 to Testerman et al. that discloses the application of electrical stimulation to the patient's hypoglossal nerve as a treatment for sleep apnea. Cho et al. do not however disclose or suggest generating neurostimulation pulses for application to the body's upper airways or diaphragm as recited in applicants claimed invention. Further Cho et al. does not disclose or suggest generating the neurostimulation pulses if cardiac pacing pulses fail to terminate a detected sleep apnea as recited in applicants claimed invention.

Accordingly, applicants respectfully submit that independent claims 1, 12, 17 and 23 are novel and unobvious over Cho et al. and are therefore allowable. Applicants further submit that claims 2-6 and 9-11, claims 13-16, claims 18-21 and claims 24-25 that depend from claims 1, 12, 17 and 23 respectively are allowable as are claims 1, 12, 17 and 23 and for additional limitations recited therein.

The Examiner rejected claims 3, 6, 14, 15, 18, 20 and 24 under 35 U.S.C §103(a) as being unpatentable over Cho et al. Applicants respectfully traverse this rejection. As argued above independent claims 1, 12, 17 and 23 are novel and unobvious over Cho et al. and are allowable. Therefore, claims 3 and 6, claims 14 and 15, claims 18 and 20 and claim 24 that depend from claim 1, 12, 17 and 23

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respectively are allowable as are claims 1, 12, 17 and 23 and for additional limitations recited therein.

The Examiner rejected claims 10 and 11 under 35 U.S.C §103(a) as being unpatentable over Bonnet. Applicants respectfully traverse this rejection. As argued above independent claim 1 is novel and unobvious over Cho et al. and is allowable. Accordingly, claims 10 and 11 that depend from claim 1 are allowable as is claim 1 and for additional limitations recited therein.

The Examiner provisionally rejected claims 1, 2, 4, 5, 17, 19 and 23 under the judicially created doctrine of double patenting as being unpatentable over claim 15 of co-pending Application No. 10/247,137 and claim 17 of Application No. 10/077,660. Applicants will file a terminal disclaimer as necessary to obviate this provisional double patenting projection when one of the conflicting claims is patented.

In light of the above claim amendments and remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

12-10-04

Date



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